LAB 01

Table of Contents

Exercise 1: Binary Image Lena

- ☐ >>> im = imread ('rendered_lena.png');
- ☐ type?
- ☐ resolution?
- ☐ >>> imshow (im);
- ☐ zoom in/out
- ☐ pan
- ☐ data cursor
- ☐ insert x y label, title, legend
- ☐ save as type

Exercise 2: Grayscale Image: Meet Isabella

- ☐ >> lenaG = imread ('lena512.bmp');
- ☐ >> isaG = imread ('ISABE_LUMI.BMP');
- ☐ data type?
- ☐ resolution?

Exercise 3: Image Spatial Resolution: Better Lena

- ☐ comparer lena.big.png et lena_gray_small.gif
- ☐ imshow…
- ☐ figure; imshow…
- ☐ zoom both

Exercise 4: Images Addition: Clown in the Mirror

- ☐ open 2 images
  - ◘ c1→ "clown1.bmp" et
  - ◘ c2→"clown2.bmp"
- ☐ add c2 to the sub-matrix in c1 in the following intervals
  - ◘ lines 60:255
  - ◘ rows 310:440
- ☐ display the resulting image
- ☐ what happened? Now the clown sees his reflexion.

Exercise 5: Image Resize

- ☐ ISABE_LUMI.BMP resolution is 512x512
- ☐ we want to make it 256x256 (size becomes ¼!)
- ☐ resize and save as isa_small.bmp
- ☐ hint:
  - ◘ replace each 2x2 sub-matrix by only 1 value → its average
  - ◘ take advantage of Matlab!

Exercise 6: Image binarization

- ☐ Grayscale images: ISABE_LUMI.BMP and lena512.bmp
- ☐ transform it into binary images
- ☐ write a Matlab function "myBinary.m" which takes as input the name of a grayscale image and returns a binary version of this image
- ☐ write a script "myBinaryTest.m" which tests this function.
- ☐ Hint
  - ◘ The easiest way is to replace each value (in [0 ... 255]) by either 0 or 255.
  - ◘ Note that there are many different algorithms to accomplish an adjusted binarization.